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Management and economics of business processes added value

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Abstract

How it results from the presented research paper, from the efficiency of enterprise processes point of view it does not to monitor and manage only the Economic Value Added (EVA), it is necessary to confront it wit the efficiency and processes value added, calculated on the basis of Value Added Index (VAI), that map the real value stream in the complex enterprise processes. The paper analyzes the key indicators and tools for management of business process efficiency based on economic value added EVA and value-added index VAI and pointed out possibilities of management of economy and value added to production process; in this regard, will be also presented partial results of issue-oriented research study. As the presented paper implies, for the purposes of business process efficiency management it is not sufficient to monitor and manage only the economic value added (EVA), it is necessary to simultaneously confront it with efficiency and value added to processes, calculated on the basis of the value added index (VAI) which maps the real value stream in complex business processes. Only mutual management and alignment of both the two parameters will provide truly relevant decisions of managers of the company and achievement of the objectives set.

*Keywords:*Value added, economic value added, business process management, value stream;

1. Introduction

The standard costing allocates all overheads to the product and these overheads relate to the amount of labor required to make the product. Some products appear to cost more than they really do and other products appear to cost less. These costs mislead people and cause them to make wrong decisions relating to pricing, profitability, make/buy and others. By this fact it doesn't motivate to lean behavior in production operations. Traditional companies use standard costing as the primary method of production costs control process (Rajnoha, Chromjaková, 2008).

Today's production environment enables a vitally mechanism in the area of monitoring of real production costs, because all types of wastes are undesirable and the motivation to cost decreasing is in according to the productivity improvement, higher efficiency and respectable cost level very important.

The cost of the product varies according to the product volume and production mix, overhead costs are related to the value stream as a whole and the maximum profitability comes from the maximum production flow through the value stream (Rašner, Rajnoha, 2007).

Economic Value Added (EVA) as the key performance indicator in business is not automatically generated only by a strategy appropriately designed and chosen (Vidová, 2004). This just defines the way to achieve it provided that

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there is an interaction between the underlying factors of success; a positive change of EVA can only be optimized intentionally provided that it becomes aligned with the knowledge of real added value of business processes (Rajnoha, Dobrovič, 2011).

Management and calculation based on value added index (VAI) of processes is focused on surveying the value of total process cost flow (PCF) through production system for the total continuous production time and thus brings a real view of the total amount of process-generated costs by considering the actual tangible and intangible factors, participating on the production process. Business process value added analysis is concentrated on surveying the costs of the entire value chain, i.e. since receiving production orders to sending the output to customers, and it strictly differentiates between costs incurred to generate added value and costs of non-productive, i.e. value-not-added activities and processes (Chromjaková, 2008).

Process management is an extensive discipline which is focused on achieving added value for customers and gaining profit for the company based on managing the business processes by activities. Activity Based Management focuses on the requirements of continuous improvement, and at the same time makes the managers use such tools for managing processes which create higher added value. Activity Based Management is the process of effective planning of business activities and achieving consistency in implementing the activities to reach their goals (Player, Keys, 1999).

Based on the results of the research we have conducted in this field we observe that introduction of Activity Based Costing model (ABC) in a selected manufacturing plant in Slovakia seems beneficial from the efficiency assessment based on our specifically designed method; however, it should be further used especially to continuously increase profitability, and thus improve Economic Value Added (EVA) indicator and the overall value of the company. In this process of continuous improvement of the company performance it is therefore crucial to incorporate besides implementation of ABC model also the measures to increase added value of individual processes by identifying those processes which do not bring added value in the overall production process (Rajnoha, Dobrovič, 2011).This issue and partial results of our research carried out in these areas are summarized in the following chapters.

2. Theoretical and methodological aspects of the issue

One of the sub-objectives set up in this research was to analyze fundamental theoretical sources and existing knowledge about this area, identify crucial quantitative parameters of this task, such as Economic Value Added (EVA), Process Value Added based on Value Added Index (VAI), Process Cost Flow (PCF) and others, and then define appropriate measurement models to accomplish other sub-objectives.

2.1. Economic Value Added – EVA

EVA (Economic Value Added) is becoming one of the key indicators which are used to measure and manage the company performance and to determine the overall value of the company from its owner's or potential investor's perspective. An important feature of EVA indicator is that company owners can realistically assess operating profit by including their own capital invested in business in counting of interest income.

More basic models for calculation of EVA indicator have been developed for example (Rašner, Rajnoha, 2007):

- Financial model – this model is nowadays considered to be more discussed as well as applied. The traditional basic formula generally used for the calculation of EVA indicator is as follows (Kislingerová, 2000):

$$EVA = NOPAT - (WACC * C) \quad (1)$$

where:

NOPAT - Net Operating Profit After Tax; WACC - Weighted Average Cost of Capital; C - Capital invested

- Costing accounting model – this model calculates EVA by using so-called theoretical interest expense which determine the cost or expense of the loan capital and equity capital as the capital necessary for company's operation (counting of theoretical interest expense in operating costs means bearing costs of not only loan capital, but also equity capital). Calculation of the capital necessary for company's operation considers assets as whole,

i.e. both fixed and current assets. These assets exclude those parts which are neutral for company's operation (e.g. speculative, overvalued, unnecessary stock or funds, premises, machines, equipment etc. which are not needed for operation) and also interest-free current liabilities (Horváth, 2004, pp. 195 – 197). This model enables also an alternative procedure in terms of evaluation of assets in purchase or repurchase prices.

The literature reports that more and more large companies are deciding to adopt the EVA performance measure as the guiding principle for their corporate policy (Pavelková, Knápková, 2005), (Tuček, Zámečník, 2007). Frequently, EVA is regarded as a single, simple measure that gives a real picture of stockholder wealth creation. In addition to motivating managers to create shareholder value and being a basis for management compensation, value based performance measurement systems have further practical advantages. Furthermore, studies suggest that EVA is an effective measure of the quality of managerial decisions as well as a reliable indicator of a company's value growth in the future. EVA is a measurement tool that provides a clear picture of whether a business is creating or destroying shareholder wealth. EVA measures the firm's ability to earn more than the true cost of capital.

2.2. Economic Value Added and Business Processes Value Added

While the Economic Value added(EVA) and its measurement methodology only considers quasi tangible factors or accounting items of individual costs (material, labour, depreciation, energy and others), calculation based on value added index (VAI) of processes is focused on surveying the value of total process cost flow (PCF) through production system for the total continuous production time and thus brings a real view of the total amount of process-generated costs by considering the actual tangible and intangible factors, participating on the production process (Chromjaková, 2008).

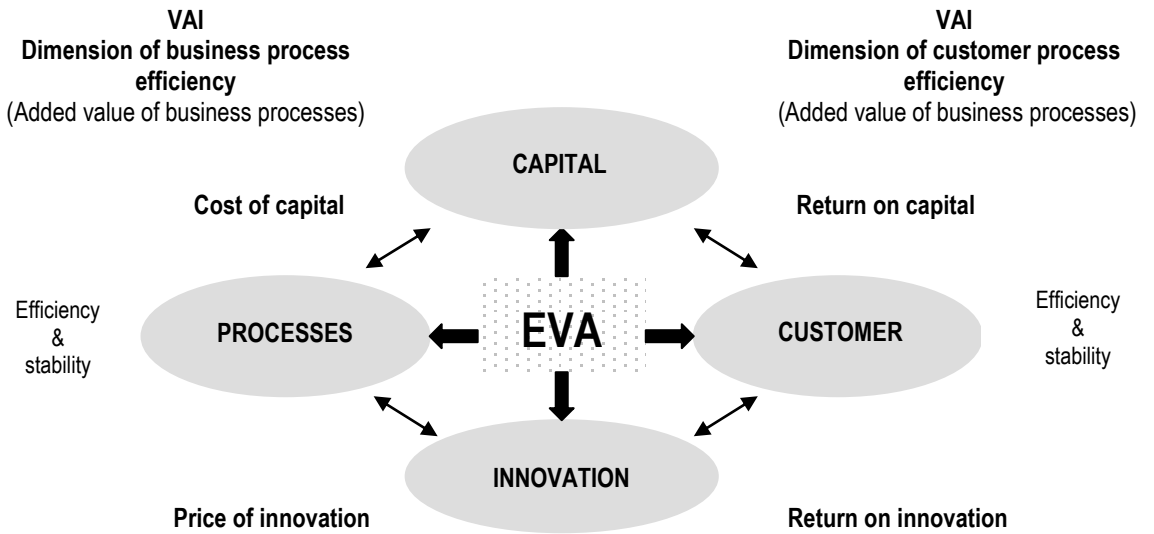

Figure 1. Two related dimensions of quantifying the value added in business
(Rajnoha, Chromjaková, 2008)

Business process value added analysis is concentrated on surveying the costs of the entire value chain, i.e. since receiving production orders to sending the output to customers, and it strictly differentiates between costs incurred to generate added value and costs of non-productive, i.e. value-not-added activities and processes. While EVA is concentrated primarily on the costs of capital employed, added value of business processes is focused on the cost of complex value chain continuous time (Rajnoha, Chromjaková, 2008).

Economic Value Added (EVA) in business processes is not automatically generated only by a strategy appropriately designed and chosen. This just defines the way to achieve it provided that there is an interaction

between the underlying factors of success; a positive change of EVA can only be optimized intentionally provided that it becomes aligned with the knowledge of real added value of business processes (Figure 1). Combination of EVA and VAI brings a brand new viewpoint the process of economic efficiency management of business process by means of actually showing the price and profitability of business assets based on the knowledge of actual inclusion of a certain volume of assets into the production process, and on the other hand it assesses effectiveness of the use of these assets through their actual workload within a clearly defined total continuous production period. It points out the fact that economic profit in realization of a production plan can be significantly different depending on actual production profit achieved, primarily affected by total production system flow (Figure 1).

Philosophy of EVA indicator management is to quantify current and future real achievable economic outputs based on the maximization of economic profit. It is thus obvious that the core is to find the optimal ratio between revenues and economic costs of the best alternative possible for selected production processes which are the real creators of economic value added. Due to company economic management as well as management of their business processes it is necessary. within a comprehensive management control system, to link both the variables already mentioned - added values - EVA and value added to processes based on knowledge of VAI - value added index. While the first reflects cost of company asset consumption, the second at the same time uses this value to quantify the efficiency of their consumption in real process.

3. Selected results of study out in manufacturing company

Table 1 shows the basic input parameters for the calculation of EVA and business process value added quantified through VAI. The calculation also takes into account coverage contribution per 1 minute of continuous production time and also puts emphasis on real fixed costs used (not planned in general). Optimization of key production parameters (number and structure of units produced, the degree of actual utilization of fixed costs, variable costs, continuous production time, reduction of the volume of current assets, etc.) can influence the resulting value of EVA and VAI indicators in favour of increasing their value.

Table 1. Calculation parameters of economic value added (EVA) and value added to production processes

Production volume– plan [pc]	100	Total equity capital [€]	2000
Unit price [€]	500	Total loan capital [€]	1000
Number of units produced [pc]	65	Machinery, equipment [€]	10
Sales revenue (T) [€]	32500	Intangible assets [€]	3
Variable costs (VC) total [€]	28000	Claims [€]	600
Coverage contribution (T- VC) [€]	4500	Commitments [€]	700
Fixed costs used (FC) total [€]	3900	Current assets [€]	550
Operating profit (OP) [€]	500	Costs of loan capital (CLC) [%]	13
Total continuous production time [min]	700	Equity share of total capital [%]	66
VA index (value added index)	0,4	Internal rate of return (IRR) [%]	24
Coverage contribution per 1 minute CPT [€]	6,4	Effective costs of LC (CLC x(1-IRR) [%]	9,88
Fixed costs unused total [€]	2100	Commitment ratio in total capital [%]	23
Tax rate (TR) (19% of OP) [%]	9,5	Asset ratio in total capital [%]	39
NOPAT (operating profit x (1- TR) [€]	405	WACC (9,88 x 0,23 + 24 x 0,39) [%]	11,63
EVA = NOPAT – (total capital x WACC)			
EVA = 405 – (3000 x 0,1163) → EVA = 56,1			

Key increase of business performance and value by means of simultaneous involvement of EVA and VAI indicators then lies in continuous improvement and optimization of individual production parameters, activities and processes. Note that, however, a necessary prerequisite for application of our model presented in company practice must be a prior implementation of process-oriented model of calculations and budgets ABC (Activity Based Costing), ABB (Activity Based Budgeting).The more practical experience and results arising from our studies conducted in selected factories shows that the highest savings - and hence improvement in the EVA and VAI indicators - can be achieved by optimizing inventories, reduction of continuous production time, slimming support

and administrative processes, or better utilization of production capacities and product portfolio restructuring (Rajnoha, Dobrovič, 2011).

4. Conclusion

As the presented paper implies, for the purposes of business process efficiency management it is not sufficient to monitor and manage only the economic value added (EVA), it is necessary to simultaneously confront it with efficiency and value added to processes, calculated on the basis of the value added index (VAI) which maps the real value stream in complex business processes. Only mutual management and alignment of both the two parameters will provide truly relevant decisions of managers of the company and achievement of the objectives set.

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